

CLAIMS:

- 1 1. A system for accepting user input, comprising:
2 a plurality of switches;
3 a pressure member coupled to the plurality of switches, the pressure member
4 having multiple sections, wherein each section of the multiple sections is associated with a
5 switch of the plurality of switches; and
6 wherein the pressure member is positioned in relation to the plurality of
7 switches such that when a force is applied by a user to one of the multiple sections, the
8 pressure member transmits a resulting force to a switch associated with the one of the
9 multiple sections thereby causing actuation of the switch associated with the one of the
10 multiple sections.
- 1 2. The system of claim 1 further comprising a display, wherein the display displays at
2 least one input option and wherein at least one of the multiple sections of the pressure
3 member is spatially associated with the at least one input option displayed.
- 1 3. The system of claim 2 wherein at least a portion the pressure member is optically
2 transparent, the pressure member is further positioned in front of the display so that the
3 display is visible through the pressure member, the plurality of switches is further located
4 adjacent to the display and the at least one input option displayed is viewed through the
5 pressure member.
- 1 4. The system of claim 3 wherein the system operates in a motor vehicle.
- 1 5. The system of claim 1 wherein the system operates in a motor vehicle.
- 1 6. The system of claim 1 wherein the system operates as a component of a media player.
- 1 7. The system of claim 1 wherein the at least one of the multiple sections has a tactile
2 element, wherein the tactile element reduces the requirement for a visual location, by the
3 user, of the at least one of the multiple sections of the pressure member.
- 1 8. The system of claim 1 wherein the pressure member includes four sections and
2 wherein each section is associated with one of the four switches.

1 9. The system of claim 1 wherein the pressure member transmits a resulting force to a
2 single switch associated with the one of the multiple sections.

1 10. The system of claim 1 wherein the pressure member transmits a resulting force to at
2 least two switches associated with the one of the multiple sections.

1 11. The system of claim 1 wherein the switch actuation initiates a system operation.

1 12. The system of claim 1 wherein the mechanical characteristics of the pressure member
2 are spatially varied, in order to focus forces exerted upon a selected section of the pressure
3 member to effect a desired switch actuation.

1 13. The system of claim 1 comprising:

2 a first switch of the plurality of switches;

3 a second switch of the plurality of switches; and

4 a control circuit;

5 wherein, as a result of the exertion of a force by the user to the pressure
6 member, the pressure member transmits a first resulting force to a first switch associated with
7 one of the multiple sections of the pressure member and a second resulting force to a second
8 switch associated with another of the multiple sections of the pressure member thereby
9 causing an actuation of the first switch of the plurality of switches and an actuation of the
10 second switch of the plurality of switches;

11 whereupon the control circuit identifies a multiple switch activation as an
12 inferred system state.

1 14. The system of claim 1, further comprising a fulcrum that localizes deflection of the
2 pressure member resulting from forces applied by a user, in order to affect which switches
3 are actuated by the applied force.

1 15. The system of claim 1 wherein the system, in response to the exertion of a force on
2 the pressure member by the user, provides confirmation of a user input to the user.

1 16. The system of claim 1, further comprising an indicator light, wherein the indicator
2 light upon the exertion of a force to the pressure member by a user, is configured to
3 illuminate in order to provide a visual confirmation of the switch actuation to the user.

1 17. The system of claim 1 wherein the system is configured to provide an audible
2 confirmation of the switch actuation to the user.

1 18. The system of claim 17 wherein the audible confirmation of the switch actuation is a
2 synthetic voice.

1 19. A system for accepting user input, comprising:

2 a first control configured to select a media source in response to an actuation
3 of the first control by a user;

4 a second control, wherein the second control has two degrees of freedom in
5 actuation configured to choose a mode from a set of modes for the selected media source in
6 response to an actuation of the first degree of freedom of the second control by the user,
7 wherein actuation of the second degree of freedom by the user of the second control is
8 configured to identify a media content item selection; and

9 a display for displaying one of the media source, mode and media content item.

1 20. The system for accepting user input of claim 19, further comprising a pressure
2 member coupled to a plurality of switches, the pressure member having multiple sections,
3 wherein each section of the multiple sections is associated with a switch of the plurality of
4 switches and wherein the pressure member is positioned in relation to the plurality of
5 switches such that when a force is applied by a user to one of the multiple sections, the
6 pressure member transmits a resulting force to a switch associated with the one of the
7 multiple sections thereby causing actuation of the switch associated with the one of the
8 multiple sections.

1 21. The system of claim 19 wherein a control comprises a shaft, wherein the shaft is
2 mounted within a void of the pressure member and secured by a fastener.

- 1 22. The system of claim 19 wherein the system delays, for a predetermined time, before
2 executing one of a user media source selection, mode selection and media content item
3 selection.
- 1 23. The system of claim 19 wherein, upon the occurrence of one of a user media source
2 selection, mode selection, and media content item selection, the system provides a sub-menu
3 of options to the user.
- 1 24. The system of claim 19 wherein a display is configured to provide a visual
2 confirmation of the media source selected.
- 1 25. The system of claim 24 wherein the display displays a color cue based on a media
2 source selected.
- 1 26. The system of claim 24 wherein the display provides a position indicator depicting to
2 the user, the relative position of a selected media content item within a browsable list of
3 media content items, wherein the position indicator is displayed in a radial format.
- 1 27. The system of claim 19 wherein the display is a touch screen and wherein the touch
2 screen is configured to process a user input.
- 1 28. The system of claim 19 wherein a control is configured to provide a visual
2 confirmation of a user input.
- 1 29. The system of claim 28 wherein the visual confirmation is text.
- 1 30. The system of claim 28 wherein the visual confirmation is a graphic.
- 1 31. The system of claim 28 wherein the visual confirmation is a color change.
- 1 32. The system of claim 28 wherein at least a portion of the control is optically
2 transparent, wherein the control is positioned over the display and wherein information
3 displayed by the display is visible through the control.
- 1 33. The system of claim 32 wherein the visual information is text.

1 34. The system of claim 32 wherein the visual information is a graphic.

1 35. The system of claim 32 wherein the visual information is a color change.

1 36. The system of claim 19 wherein the system is configured to provide an audible
2 confirmation of the media source selected.

1 37. The system of claim 36 wherein the audible confirmation of the media source
2 selected is a synthetic voice.

1 38. The system of claim 19 wherein a second control is positioned in front of the display
2 and wherein the second control accepts actuation of the second degree of freedom by the
3 user, as a user input.

1 39. A system for accepting user input, comprising:

2 at least one switch;

3 a display, wherein the display depicts menu options including:

4 media content information;

5 control options; wherein the control options are displayed on the display near
6 the switch

7 a pressure member disposed over the display wherein at least a portion of the display
8 is visible through the pressure member, the pressure member being configured to accept a
9 force exerted by a user within a section of the pressure member;

10 the pressure member further coupled to the at least one switch such that a
11 resulting force transmitted by the pressure member in response to a user applied force causes
12 a switch actuation; and

13 at least one control, configured to accept one of a push and turn in order to select one
14 of the menu options.

1 40. The system of claim 39 wherein at least a portion of the at least one control is
2 optically transparent, wherein the at least one control is positioned over the display and
3 wherein information displayed by the display is visible through the at least one control.

1 41. The system of claim 39 wherein the display displays a color to provide user feedback.

1 42. The system of claim 40 wherein the at least one control displays a color to provide
2 user feedback.

1 43. The system of claim 40 wherein the at least one control displays an symbolic
2 representation of a selected one of the media content source, mode and media content item.

1 44. The system of claim 19 for accepting user input, wherein said first control has two
2 degrees of freedom in actuation, and wherein actuation of the first degree of freedom is
3 associated with selection of a media source, and the second degree of freedom is associated
4 with control of system volume.

1 45. A system for accepting user input in a media player, comprising:
2 a display for displaying one of the media source, mode and media content
3 item;
4 at least one control, wherein the at least one control has two degrees of
5 freedom in actuation, wherein the at least one control is disposed over the display and
6 at least a portion of the control is optically transparent such that at least a portion of
7 the display is visible through the at least one control.

1 46. A media player for use in a motor vehicle, comprising:
2 a plurality of switches;
3 a display for displaying one of the media source, mode and media content
4 item;
5 a pressure member coupled to at least one of the plurality of switches, the
6 pressure member disposed over the display wherein at least a portion of the display is
7 visible through the pressure member, the pressure member being configured to accept
8 a force exerted by a user within a section of the pressure member; and
9 two controls, wherein each of the two controls is located to one side of the
10 display and wherein the controls have two degrees of freedom in actuation.

1 47. In a system for accepting a user input, a method for accepting the user input,
2 comprising the steps of:

displaying a set of options on a display to prompt for a user selection, wherein at least a portion of the display is visible through a pressure member, the pressure member being positioned in front of the display;

generating a switch actuation in response to a force exerted by the user on a section of the pressure member wherein the section of the pressure member corresponds to a desired option, wherein the switch is arranged in an array of switches adjacent to the display; and

based on the switch actuation, changing a system state.

48. The method of claim 47, further comprising the step of providing a confirmation in response to the exertion of the force to the section of the pressure member by the user.

49. The method of claim 48 wherein the confirmation is an audible confirmation.

50. The method of claim 47, further comprising the step of:
based on the system state, initiating a system operation.

51. The method of claim 47 wherein the step of generating a switch actuation comprises the steps of:

detecting a first switch actuation and a second switch actuation caused by the transmission of a resulting force by the pressure member to the first switch and the second switch; and

generating an inferred system state.

52. The method of claim 51 wherein the inferred system state initiates a browse function.

53. The method of claim 47, further comprising the step of:

accepting actuation of the first degree of freedom of a first control to select one of the following sources: uIndex, AM, FM, satellite radio, compact disk, hard drive, uMusic, DVD, HVAC/climate, core navigation.

54. The method of claim 47, further comprising the step of:

accepting actuation of the first degree of freedom of a second control to select one of the following modes: AM presets, AM seek, AM tune, FM preset, FM seek, FM tune,

4 FM station, FM song, FM genre, FM artist, satellite radio presets, satellite radio station,
5 satellite radio category, satellite radio station, satellite radio song, satellite radio genre,
6 satellite radio artist, CD Track, CD time, CD Disk, CD Artist, CD Song, CD Genre, hard
7 drive title, hard drive track, hard drive artist, hard drive time, hard drive genre, uMusic track,
8 uMusic time, DVD Chapter, HVAC/climate temperature, HVAC/climate fan, core navigation
9 origin, core navigation destination, core navigation directions.

1 55. The method of claim 54, further comprising the steps of:
2 displaying a list of options pertinent to the selected mode; and
3 selecting a desired option based on actuation of the first degree of freedom of
4 the second control.